

Conserving Connectivity: The Coachella Valley Multiple Species Habitat Conservation Plan

Buford Crites



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



KERN

LOS ANGELES

SAN BERNARDINO

ORANGE

RIVERSIDE

SAN DIEGO

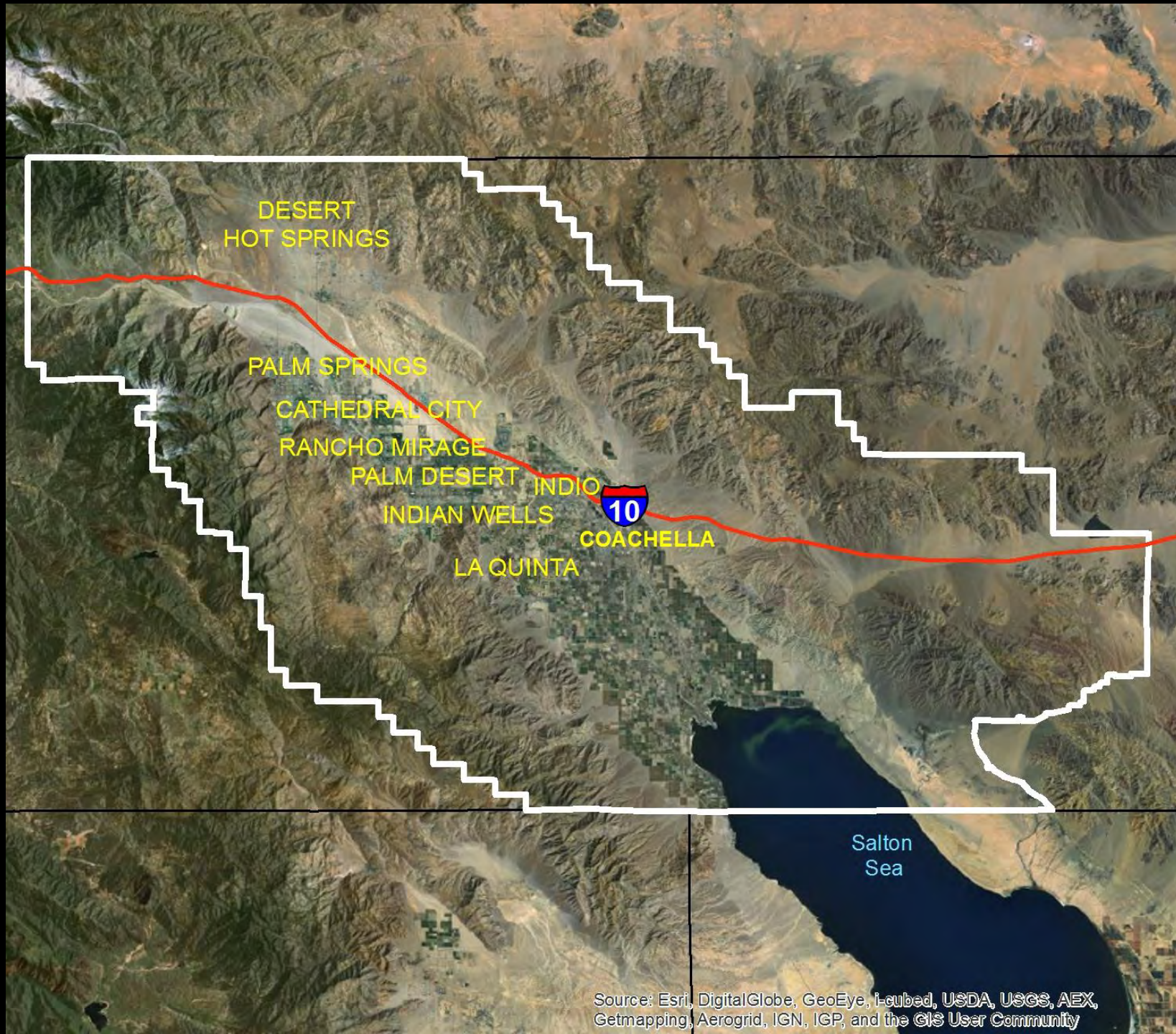
IMPERIAL

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS-User Community

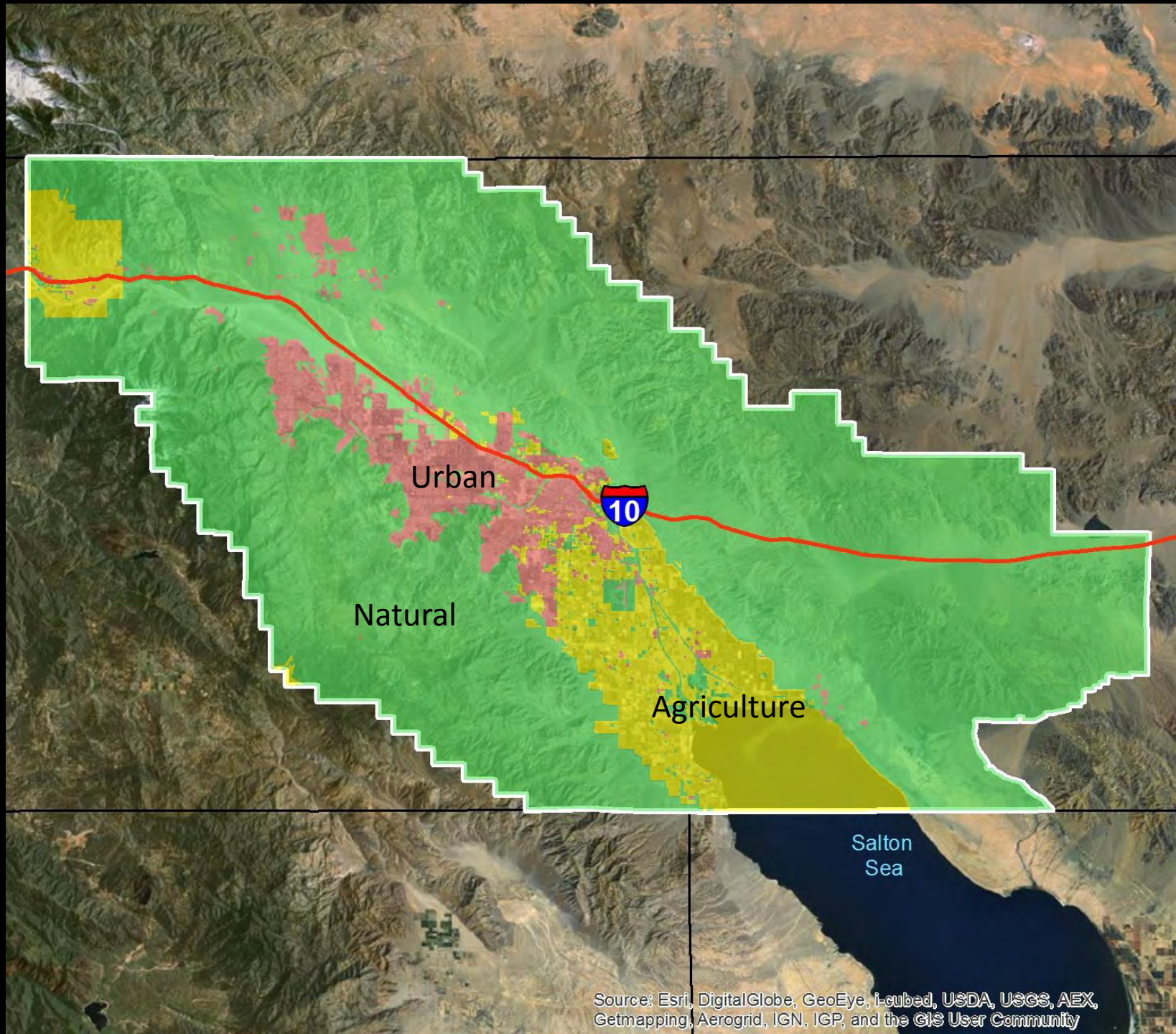


Coachella
Valley

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS,
AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User
Community



Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Mt San Jacinto

10,834 ft

500 ft

★
Riviera Hotel





1940

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS,
AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User
Community

An aerial photograph of the western United States, specifically showing parts of California, Nevada, and Arizona. The map is overlaid with a grid of red-shaded areas, which appear to be land parcels or administrative boundaries. A white outline is drawn on the map, enclosing a region in central Nevada. The year '1950' is printed in large white text in the upper right corner. The map shows a mix of desert and mountainous terrain, with some blue areas representing water bodies like the Gulf of California and Lake Mead.

1950

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

An aerial photograph of the Colorado Plateau region, showing a mix of desert and mountainous terrain. A large area on the left, covering parts of Utah and Arizona, is shaded in solid red. A white outline delineates a specific region in the center-right, encompassing parts of Colorado and Utah. The surrounding landscape is a mosaic of brown, tan, and green patches, representing different land cover types. The year '1960' is printed in large white text in the upper right corner.

1960

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

An aerial photograph of a coastal region, likely the Gulf of California, showing a mix of desert and mountainous terrain. A large body of water is on the left, and a smaller lake is on the right. A white outline highlights a specific area in the center-right. Red patches are scattered across the land, particularly along the coast and in the central area. Black lines indicate political boundaries.

1970

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

An aerial photograph of the western United States, specifically showing California, Nevada, and parts of Arizona and Oregon. The map is overlaid with red semi-transparent polygons of various shapes and sizes, primarily concentrated in the central and southern regions. A white outline delineates a specific area in the eastern part of California. The coastline of California is visible on the left, and a large body of water, likely Lake Mead, is in the bottom right. The year '1980' is printed in the upper right.

1980

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

An aerial photograph of the southwestern United States, specifically showing parts of California, Nevada, and Arizona. A large, irregular area is shaded in red, covering much of the coastal and inland regions. A white outline is drawn on the map, enclosing a specific area in the eastern part of the red-shaded region. The map also shows the blue waters of the Pacific Ocean to the west and the Colorado River to the south. The year '1990' is displayed in the upper right corner.

1990

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

A map of the western United States, specifically showing California, Nevada, and parts of Arizona and Oregon. A large area in the central and southern parts of California is shaded in red. A white outline highlights a specific region within the red-shaded area, located in the eastern part of California. The map includes geographical features like the Pacific Ocean to the west, the Colorado Desert to the south, and various mountain ranges and valleys. The year '2000' is displayed in the upper right corner.

2000

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

An aerial photograph of the western United States, showing California, Nevada, and parts of Arizona and Oregon. A large area of the state is overlaid with a red, pixelated pattern, indicating a specific land use or data set. A white outline highlights a specific region within the red area, located in the central-eastern part of California. The text '2010' is displayed in the upper right corner. The source information is located in the bottom right corner.

2010

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

A satellite map of the western United States, including California, Nevada, and Arizona. The map features a red overlay covering large portions of the land area, particularly in the central and southern regions. A white outline highlights a specific area in the eastern part of California. The Pacific Ocean is visible on the left, and Lake Mead is on the right. The year '2020' is displayed in the upper right.

2020

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



2030

This map displays the Pacific Northwest region, including parts of Washington, Oregon, and California. A large area, particularly in the central and western parts of the region, is highlighted in red, indicating projected high-risk areas for wildfires by the year 2030. The red areas are concentrated in the coastal and mountainous regions. A white outline delineates a specific sub-region within the larger red area, possibly representing a study area or a specific administrative boundary. The map also shows the blue waters of the Pacific Ocean to the west and the rugged terrain of the mountains to the east.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



This map displays the Pacific Northwest region, including parts of Washington, Oregon, and California. The background is a satellite image showing terrain, forests, and water bodies. Overlaid on this is a red-shaded area representing projected land use changes for the year 2040. The red areas are concentrated in the coastal and inland regions, with some patches in the mountainous areas. A white outline highlights a specific region in the central part of the map, likely representing a state boundary. The year '2040' is prominently displayed in the upper right corner.

2040

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Coachella Valley Fringe-toed Lizard



1986 Fringe-toed Lizard Preserve

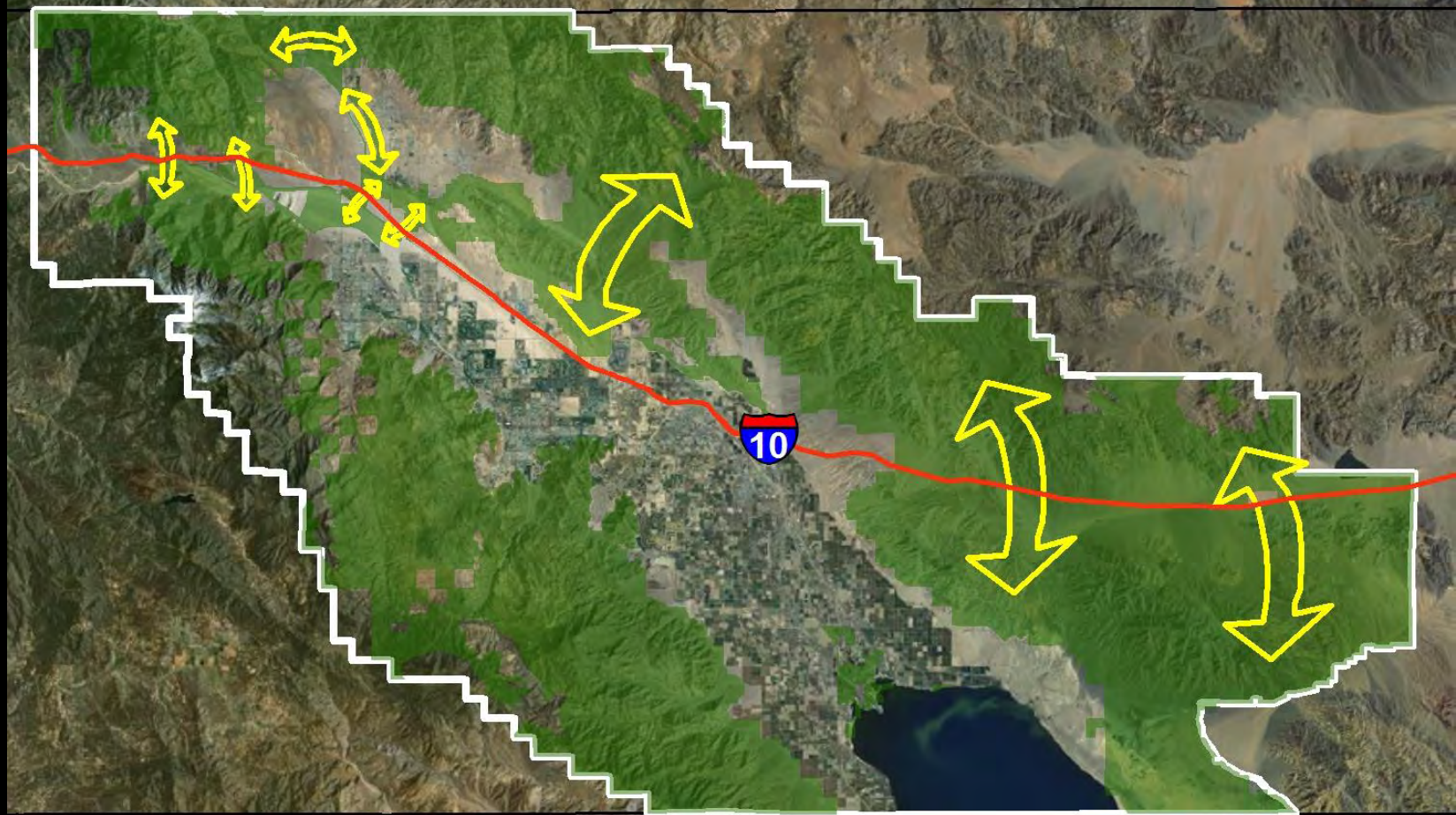


Coachella Valley Multiple Species Plan



Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Corridors and Linkages



Salton
Sea



Joshua Tree National Park

Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



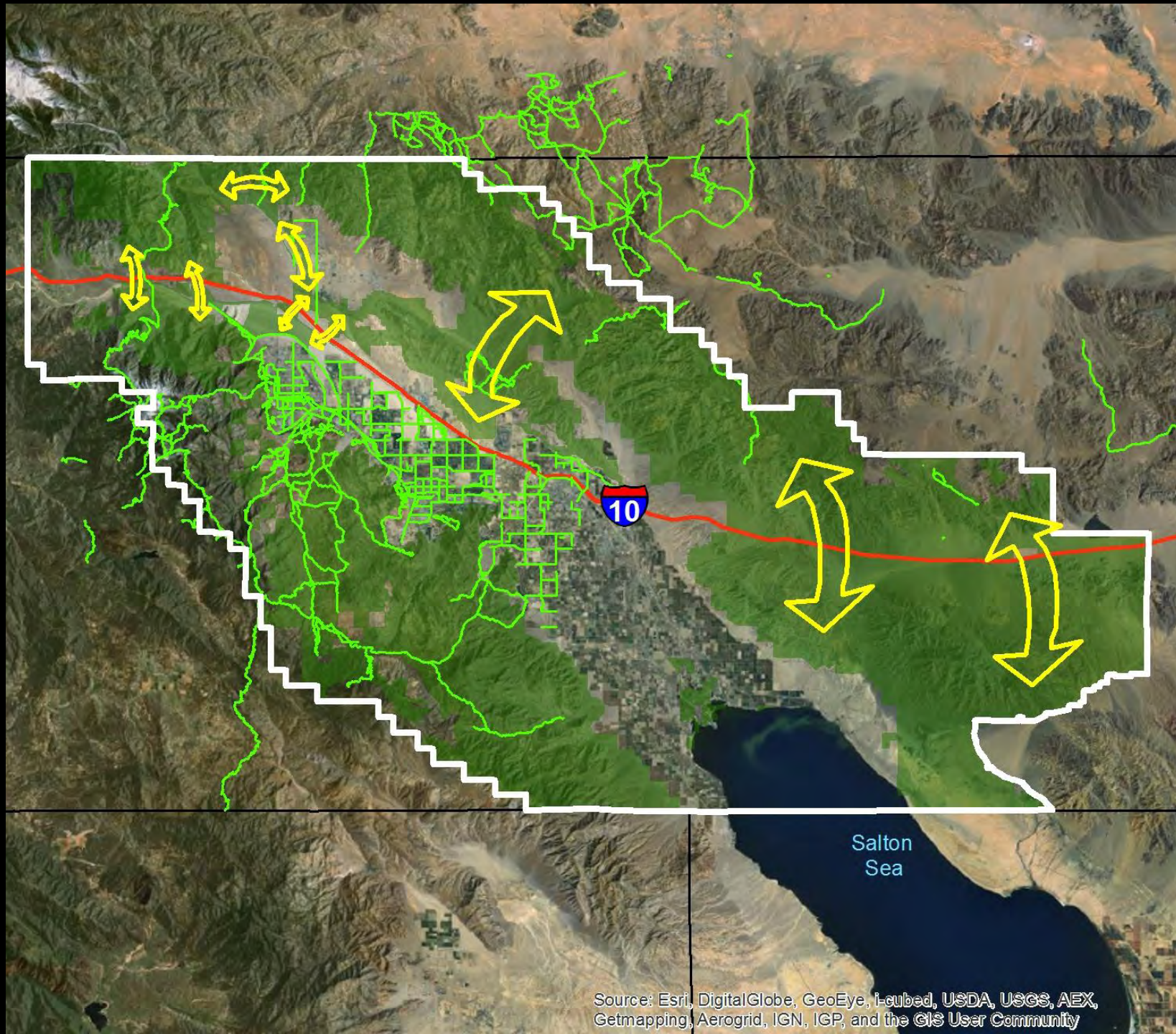
Trails of Joshua Tree National Park

Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

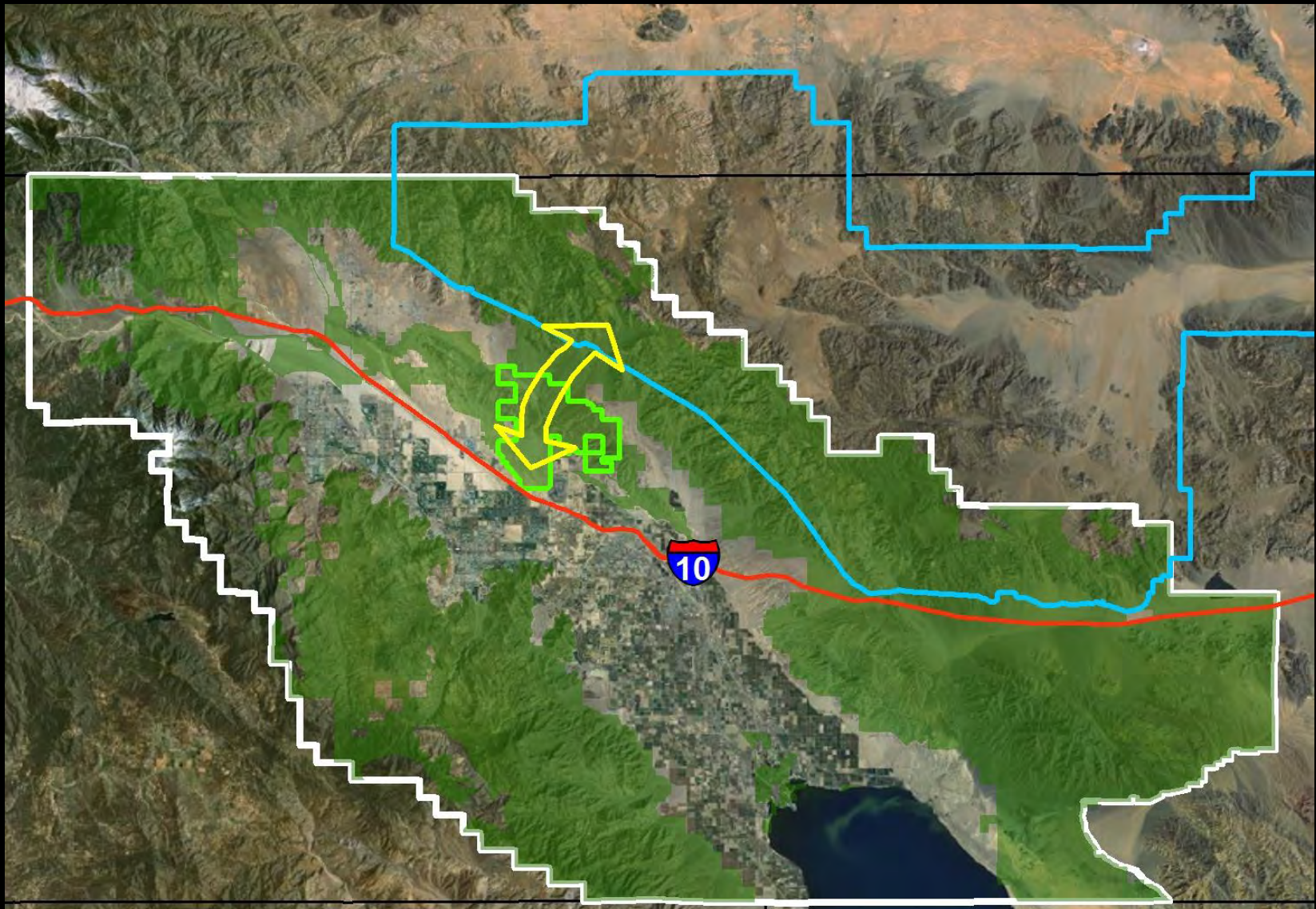


All Existing Trails

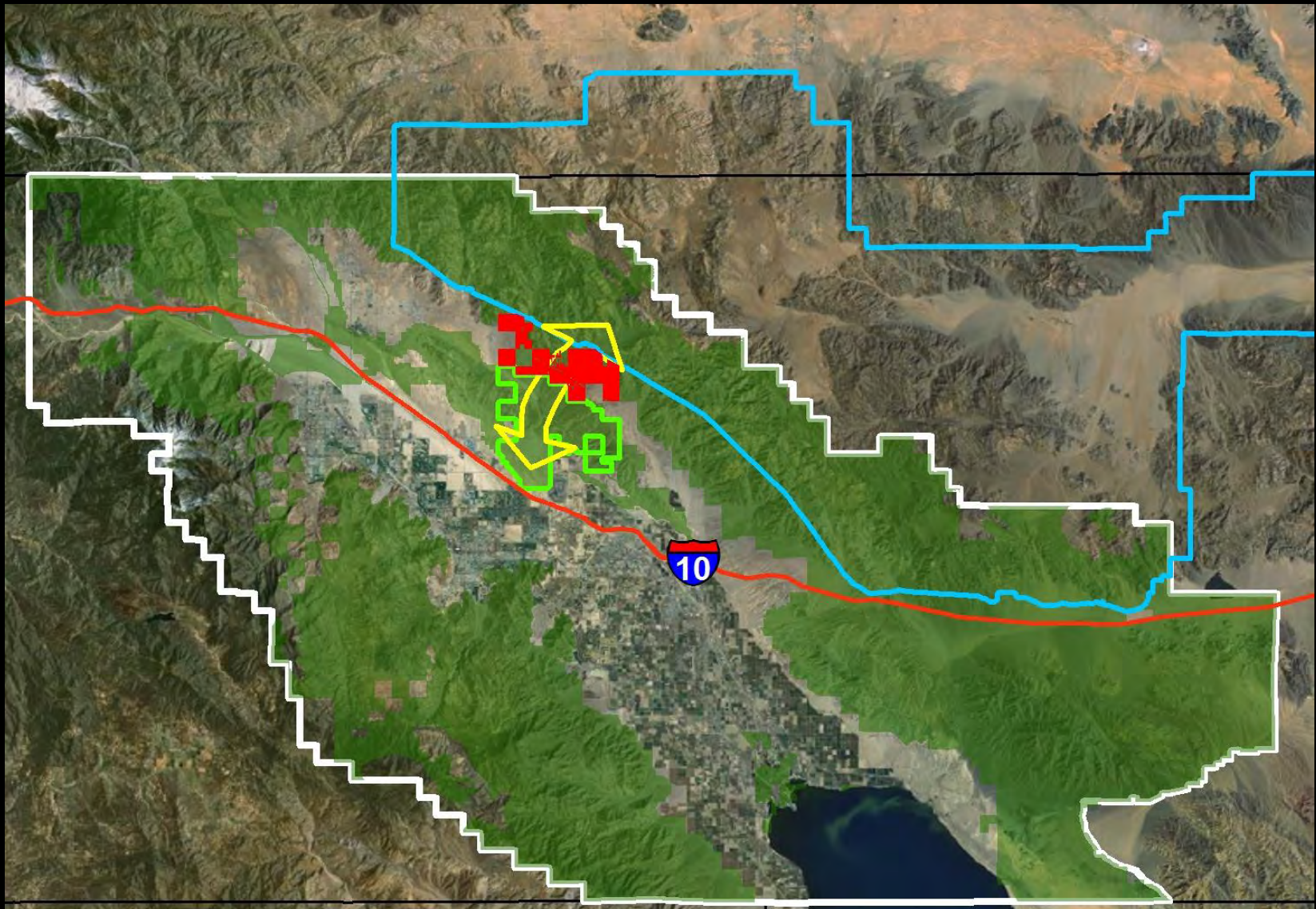
Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Linkage between National Park and Preserve



The Proposed Joshua Hills Development

Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

San Gorgonio – Joshua Tree Linkage



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Big Morongo
Preserve

San Geronio
Wilderness

Joshua Tree
National Park

The Proposed Palmwood Project

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Existing Conservation in 1996

San Geronio
Wilderness

Santa Rosa and San Jacinto Mountains National Monument

Joshua Tree National Park

Coachella
Valley Preserve

Mecca Hills/
Orocopia Wilderness

Conservation in 1996

Desert Hot Springs

Palm Springs

Cathedral City

Rancho Mirage

Palm Desert

Indian Wells

La Quinta

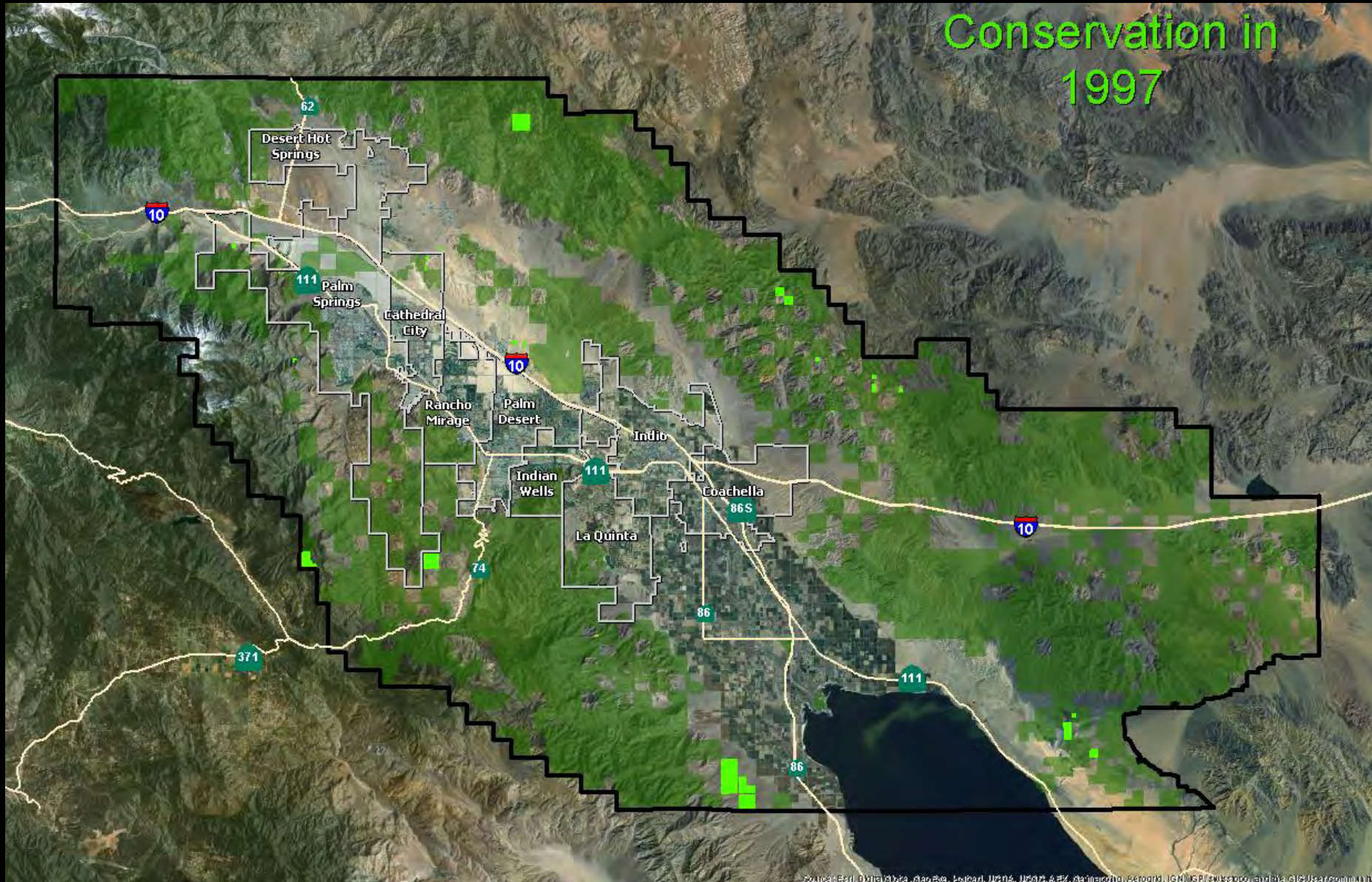
Indio

Coachella

Highways: 10, 62, 111, 74, 86, 371

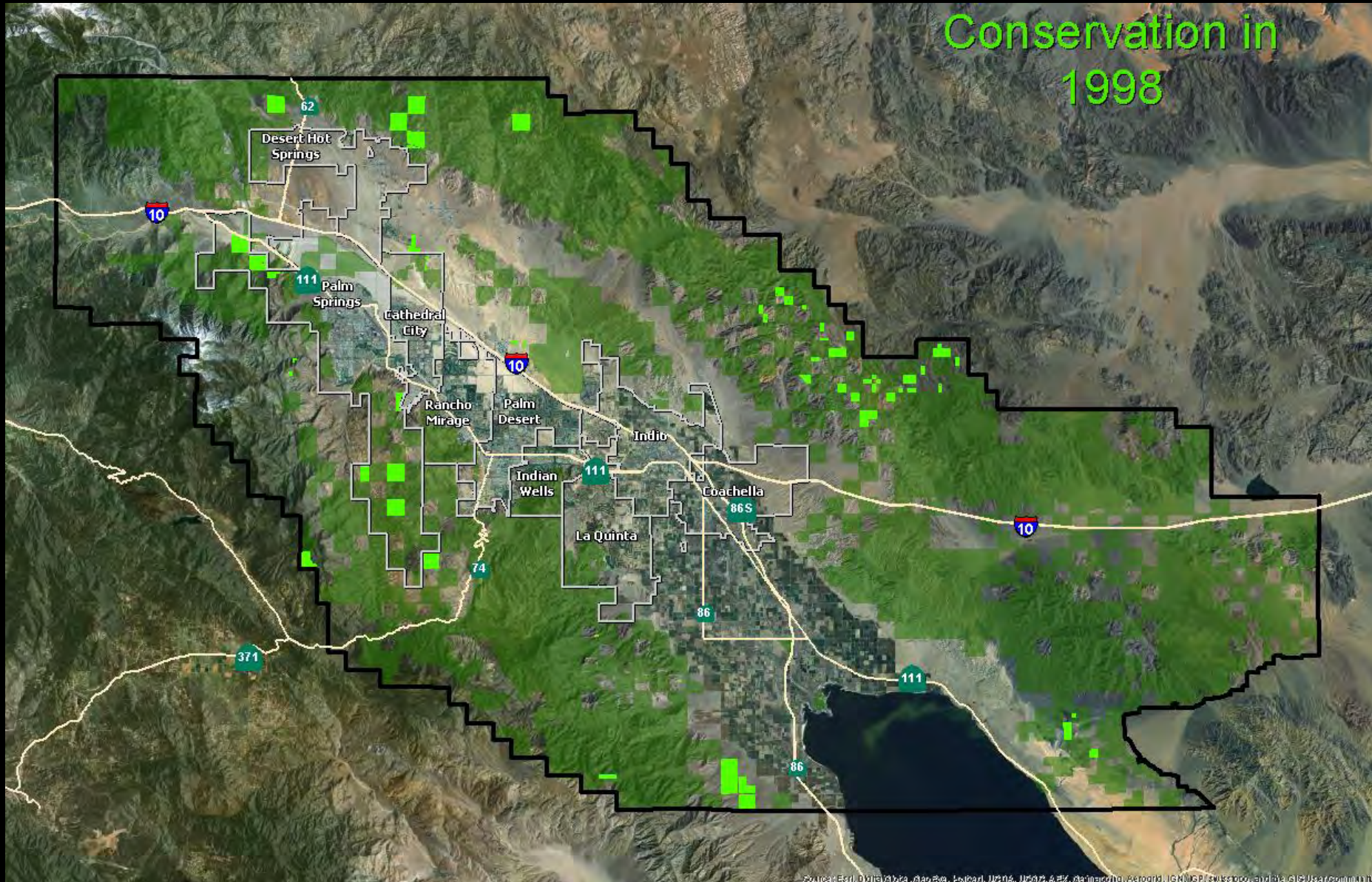
Source: Esri, DigitalGlobe, GeoEye, IGN, GeoEye, Intermap, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

Conservation in 1997



Sources: Esri, DigitalGlobe, GeoEye, AeroGRID, IGN, USGS, USDA, Swiremap, GeoEye, IGN, GeoEye, and the GIS User Community

Conservation in 1998

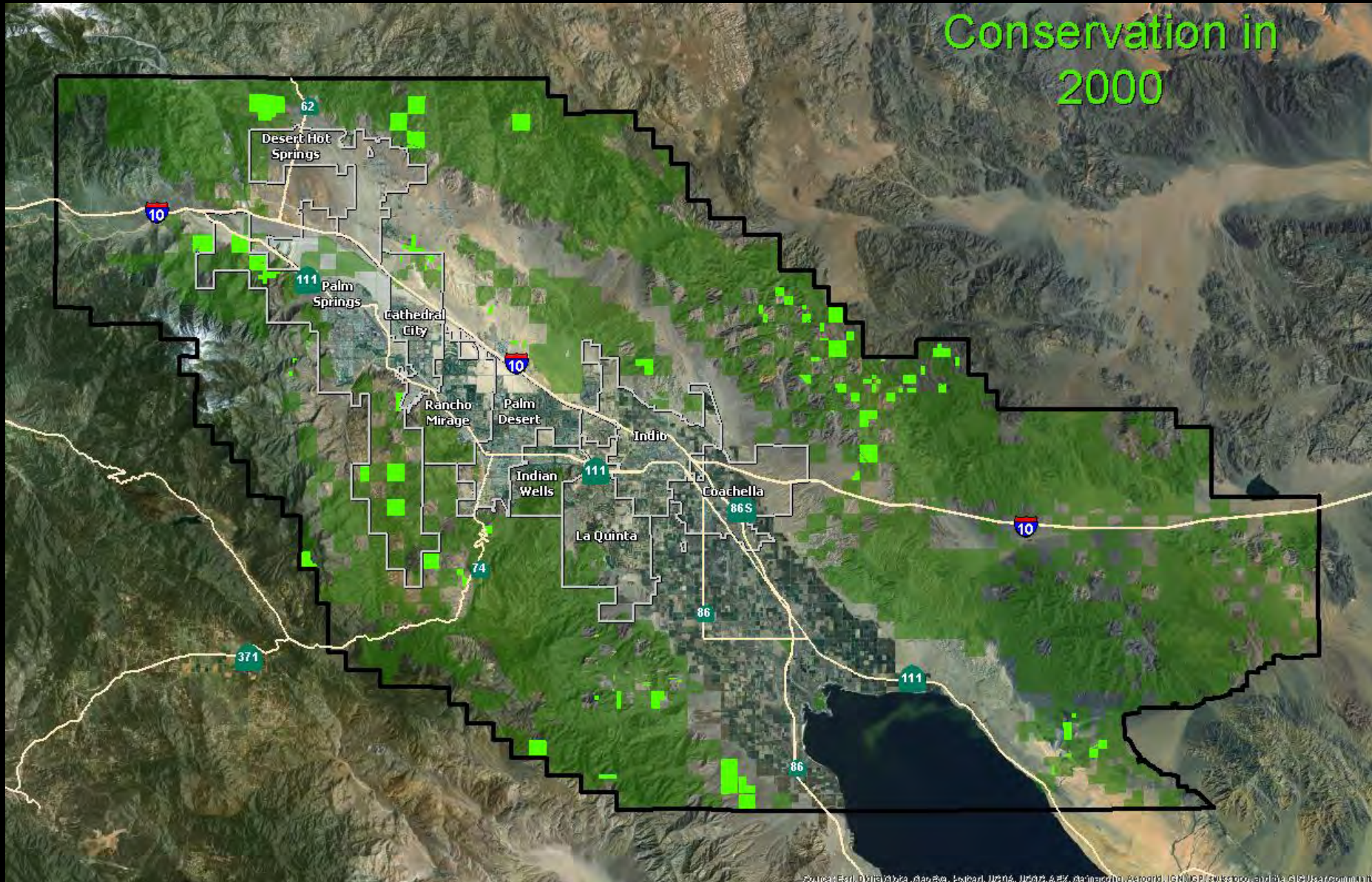


Sources: Esri, DigitalGlobe, GeoEye, AeroGRID, IGN, USGS, USDA, Swiremap, GeoEye, IGN, GeoEye, and the GIS User Community

Conservation in 1999

Sources: Esri, DigitalGlobe, GeoEye, Earthstar (United States), CNR, Aermap, IGN, IGPS, swisstopo, and the GIS User Community

Conservation in 2000



Sources: Esri, DigitalGlobe, GeoEye, AeroGRID, IGN, USGS, USDA, Swiremap, GeoEye, IGN, GeoEye, and the GIS User Community

Conservation in 2001

Desert Hot Springs

Palm Springs

Cathedral City

Rancho Mirage

Palm Desert

Indian Wells

La Quinta

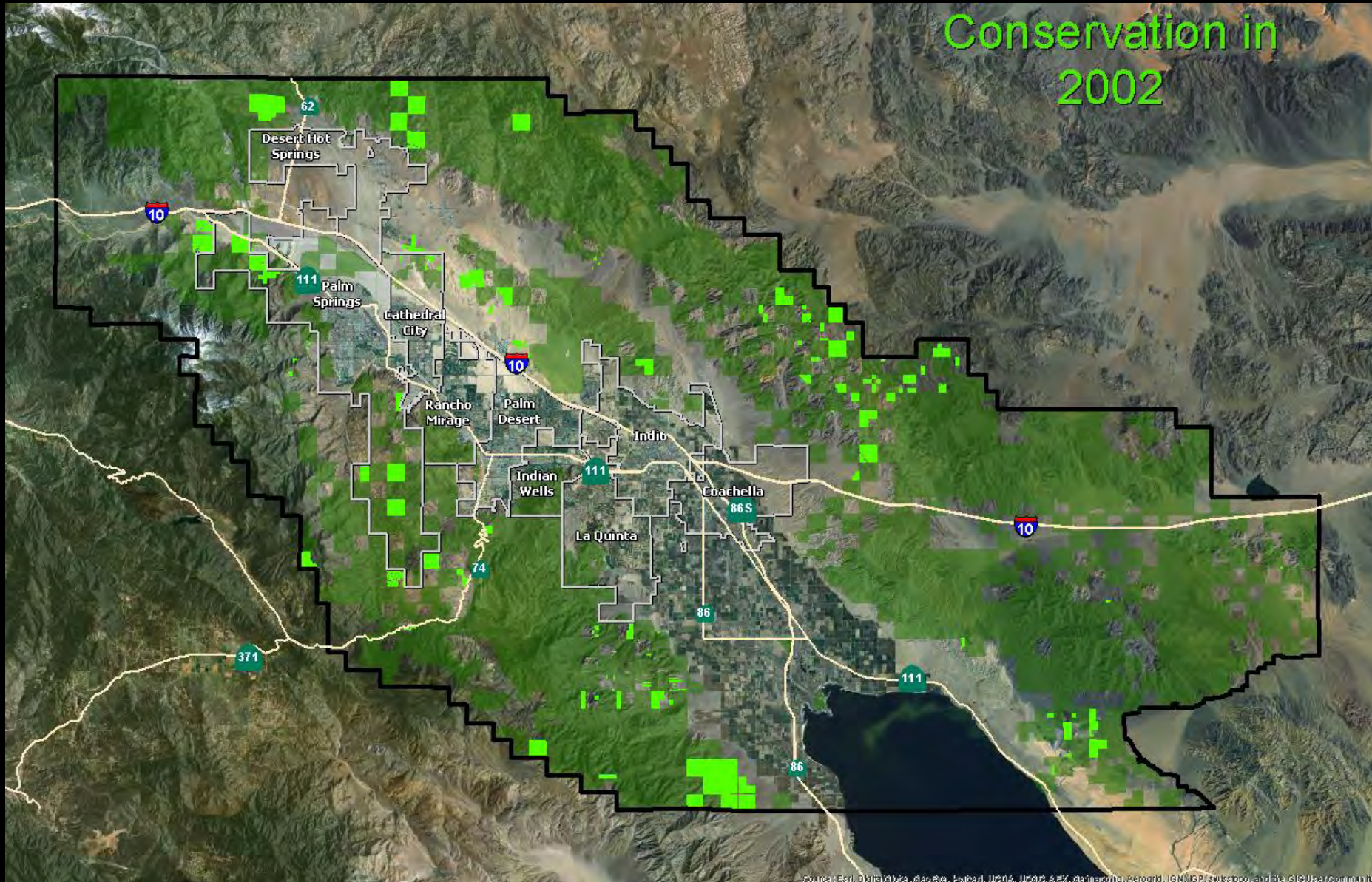
Coachella

Indio

Highways: 10, 15, 111, 62, 74, 86, 86S, 371

Sources: Esri, DigitalGlobe, GeoEye, Earthstar (United States), CNR, Aermap, IGN, IGPS, swisstopo, and the GIS User Community

Conservation in 2002



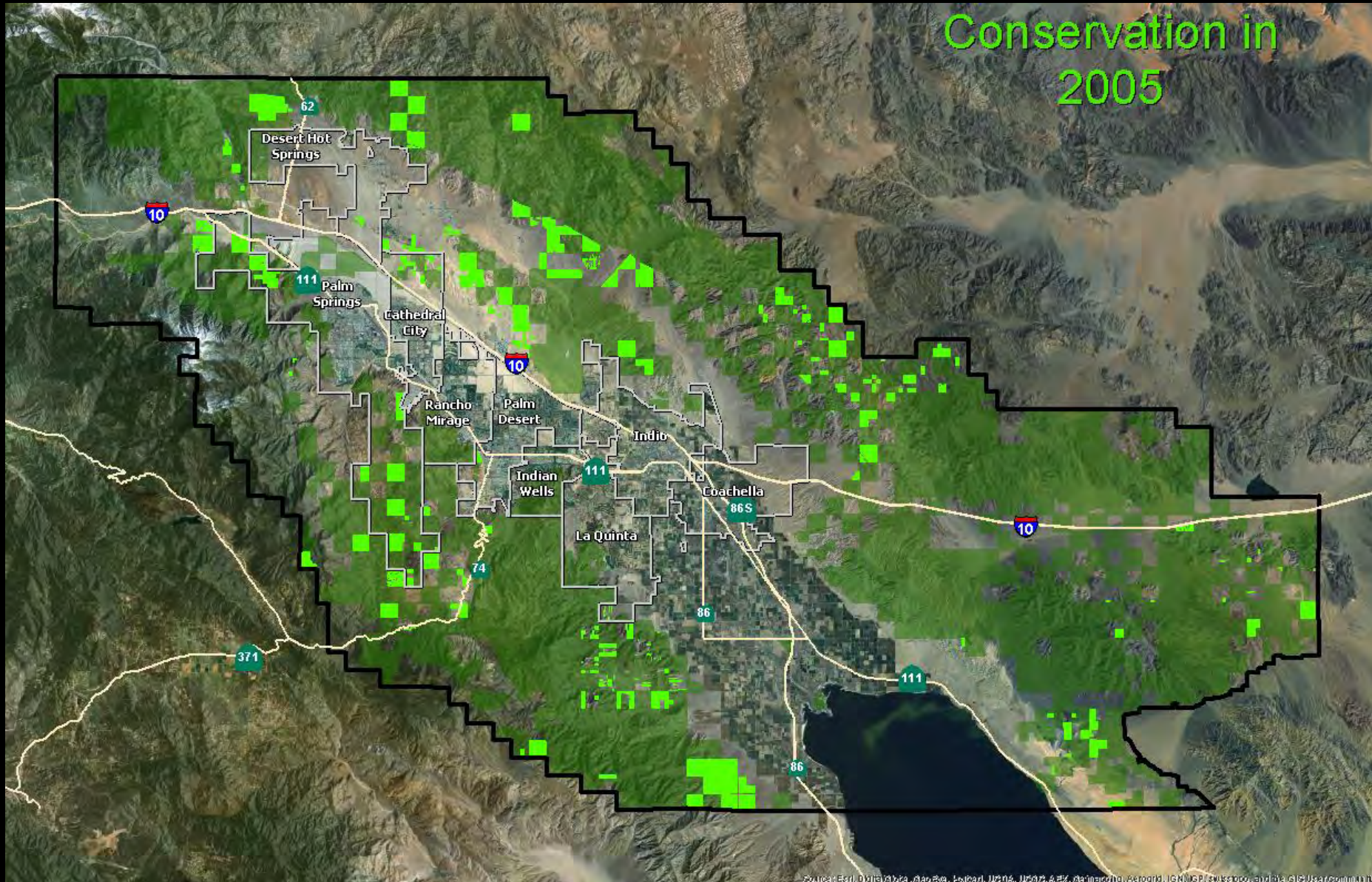
Source: Esri, DigitalGlobe, GeoEye, AeroMap, USDA, USDA, AER, GeoEye, GeoEye, IGN, GeoEye, and the GIS User Community

Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

A map of Southern California, specifically the Coachella Valley and surrounding areas, showing land use and conservation status in 2004. The map is overlaid with a grid of green and yellow squares, indicating different levels of conservation or land use. Major roads, including Interstate 10 (I-10) and State Routes 62, 74, 86, and 111, are shown. Key locations labeled include Desert Hot Springs, Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, and Coachella. The map also shows the Colorado River and the Salton River. The title 'Conservation in 2004' is displayed in green text in the top right corner.

Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

Conservation in 2005



Sources: Esri, DigitalGlobe, GeoEye, AeroGRID, IGN, USGS, USDA, Swiremap, GeoEye, IGN, GeoEye, and the GIS User Community

A map of the Coachella Valley region in Southern California, showing land use and conservation areas in 2006. The map is overlaid on a satellite image. A large black outline defines the study area. Within this area, various land use types are represented by different colors: green for vegetation, brown/tan for desert scrub, and grey for urban/developed areas. Numerous small, bright green squares are scattered across the map, indicating specific conservation or protected areas. Major roads are shown as yellow lines, with route markers for 10, 62, 111, 74, 371, 86, and 86S. Labeled locations include Desert Hot Springs, Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, Indio, La Quinta, and Coachella. The map is titled "Conservation in 2006" in green text in the top right corner.

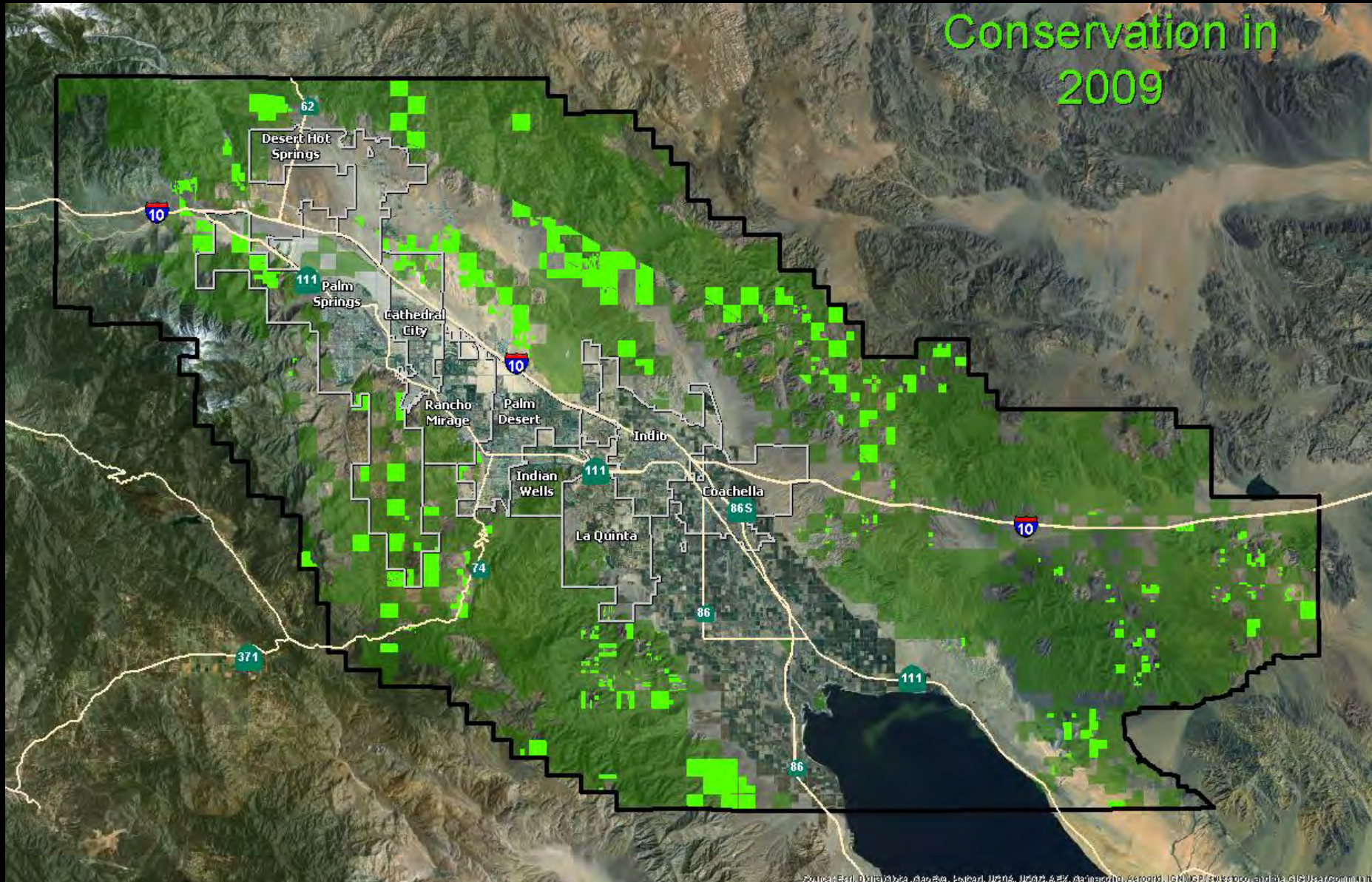
Sources: Esri, DigitalGlobe, GeoEye, Earthstar (United States), CNR, Aermap, IGN, IGPS, swisstopo, and the GIS User Community

A map of Southern California, specifically the Coachella Valley and surrounding areas, showing land use and conservation status in 2007. The map is overlaid with a grid of green and yellow squares, indicating different levels of conservation or land use. Major cities and towns labeled include Desert Hot Springs, Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, Indio, La Quinta, and Coachella. Highways shown include Interstate 10 (I-10), State Route 62, State Route 111, State Route 74, State Route 86, and State Route 371. The map also shows the Colorado River and the Salton River. The title 'Conservation in 2007' is displayed in green text in the top right corner.

Sources: Esri, DigitalGlobe, GeoEye, Earthstar Open Imagery, DeLorme, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

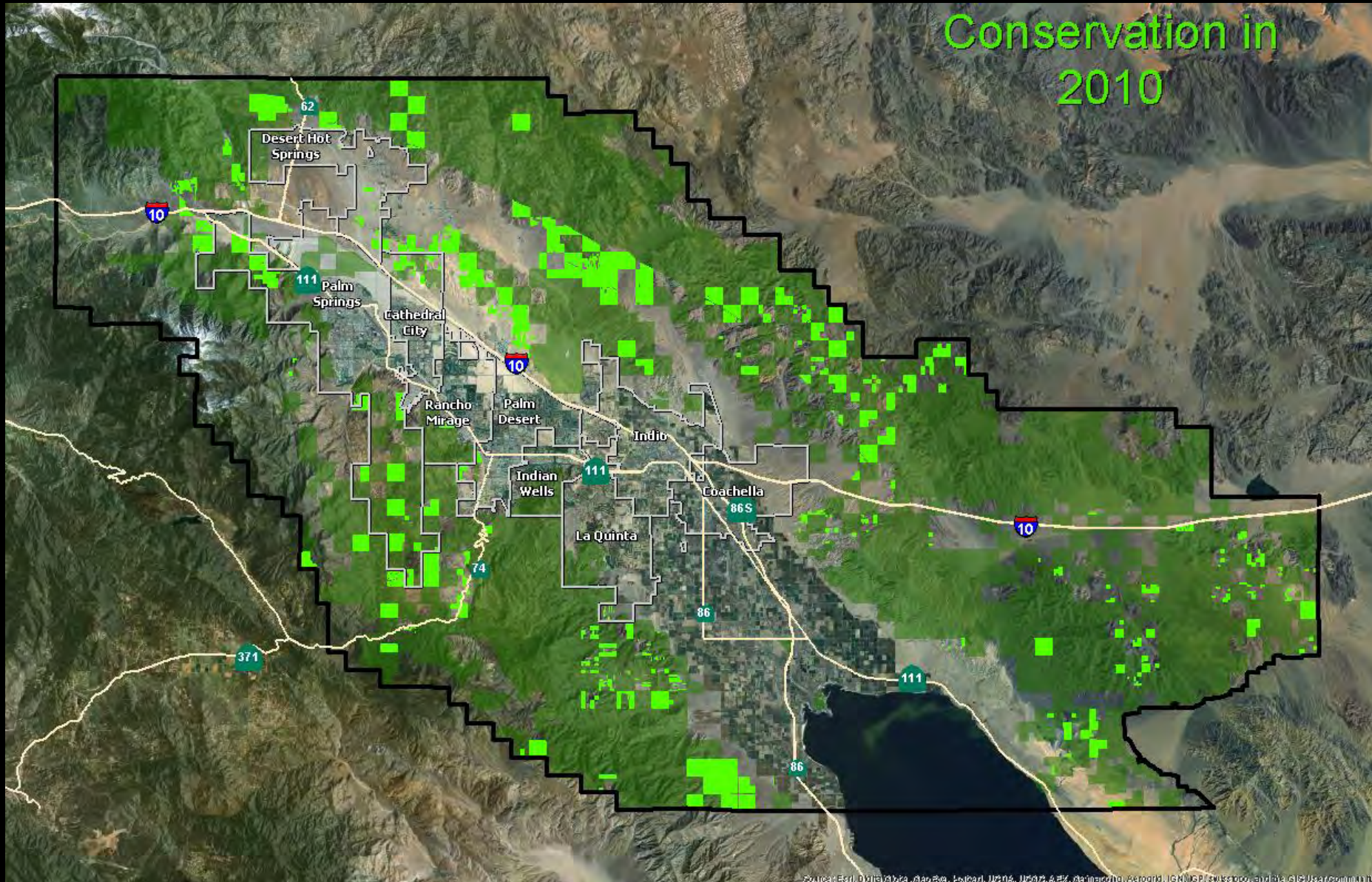
Source: Esri, DigitalGlobe, GeoEye, IGN, GeoEye, Landsat, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

Conservation in 2009



Sources: Esri, DigitalGlobe, GeoEye, AeroGRID, IGN, USGS, USDA, Swiremap, GeoEye, IGN, GeoEye, and the GIS User community

Conservation in 2010



Sources: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USDA, AER, GeoEye, AeroGRID, IGN, SPT, Skyway, and the GIS User community

Conservation in 2011

Desert Hot Springs

Palm Springs

Cathedral City

Rancho Mirage

Palm Desert

Indian Wells

Indio

La Quinta

Coachella

Highways: 10, 62, 111, 74, 86, 371

Conservation in 2011

A map of Southern California, specifically the Coachella Valley and surrounding areas, showing land use and conservation status in 2012. The map is overlaid with a grid of green and yellow squares, indicating different levels of conservation or land use. Major cities and towns labeled include Desert Hot Springs, Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, Indio, La Quinta, and Coachella. Major highways shown include Interstate 10 (I-10), State Route 62, State Route 111, State Route 74, State Route 371, and State Route 86. The map also shows the Colorado River and the Salton River. The title 'Conservation in 2012' is displayed in green text in the top right corner.

Source: Esri, DigitalGlobe, GeoEye, Earthstar, United States, USDA, AER, GeoMapping, AeroGRID, IGN, and the GIS User Community

[illegible]

Over 88,000 Additional Acres!

Source: Esri, DigitalGlobe, GeoEye, Earthstar, United States, USDA, AER, GeoMapping, AeroGrid, IGN, IGP, swisstopo, and the GIS User Community









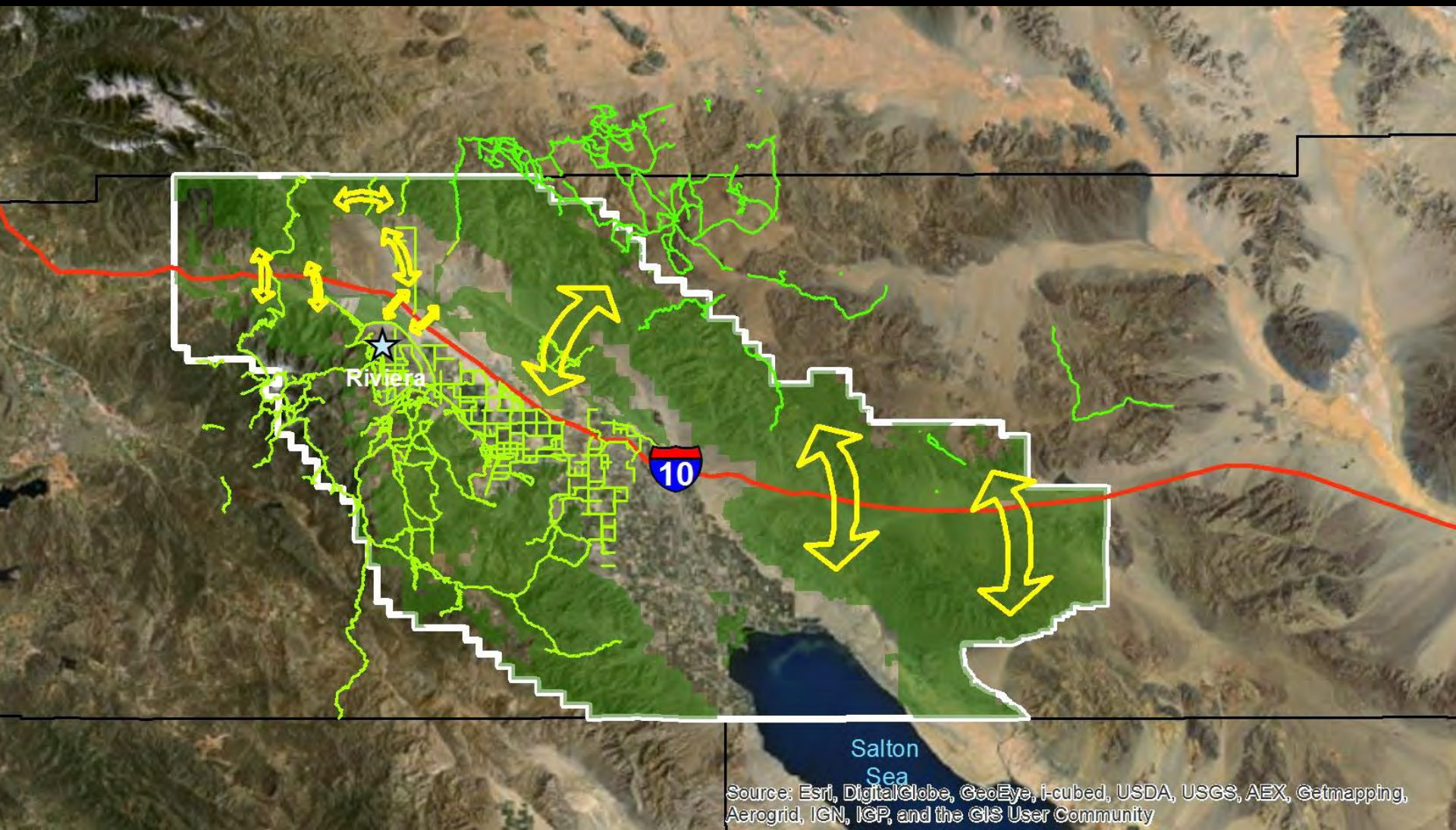


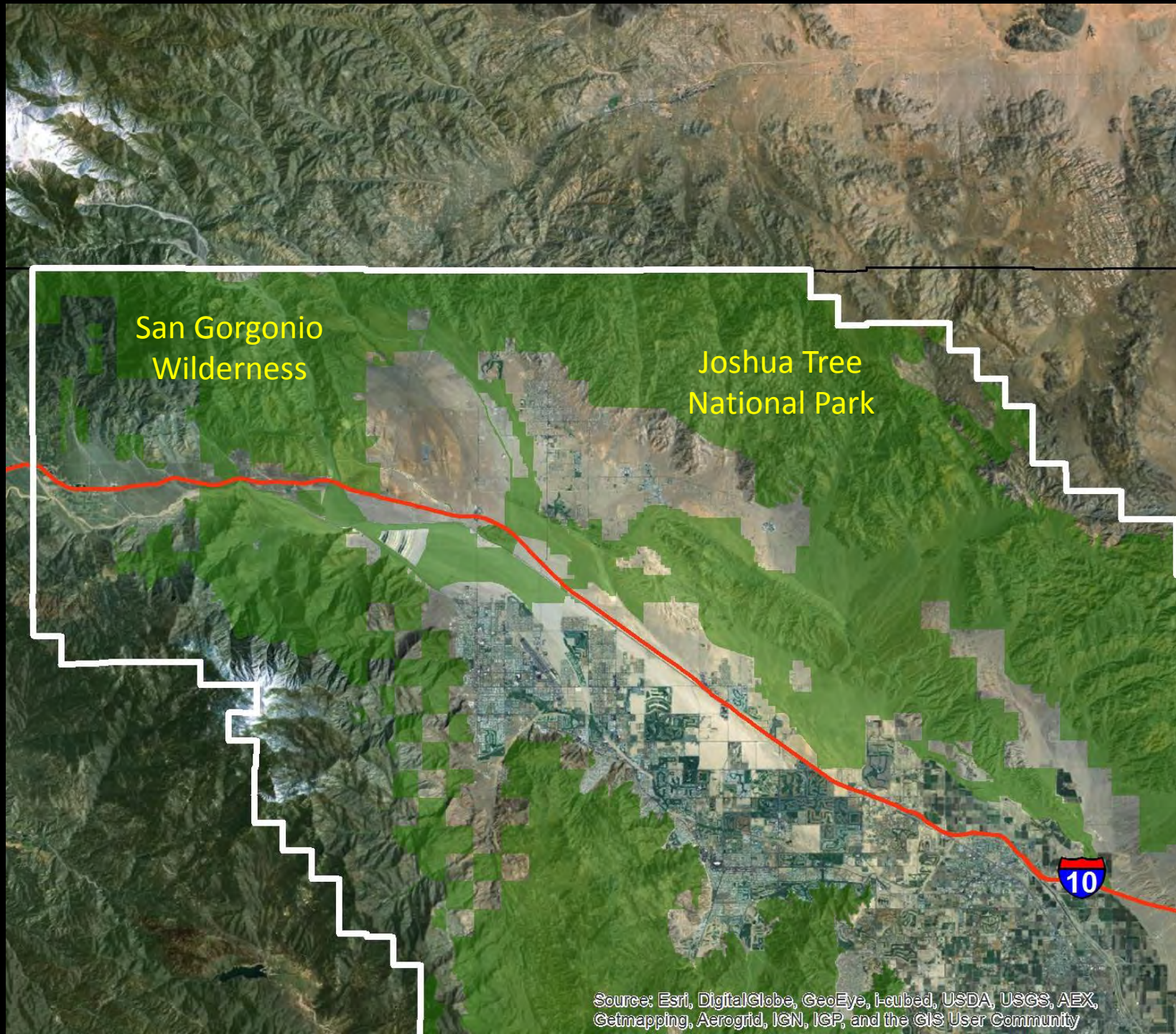






Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community





Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Big Morongo
Preserve

San Geronio
Wilderness

Joshua Tree
National Park

10

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX,
Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Corridors and Linkages



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community